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ABSTRACT

The premise of this document is that an optimistic view of the relationship between counseling and testing services is warranted in the new century. The document focuses on the integration of testing and counseling via the Internet. Advantages and concerns related to both e-mail interactions and chat and/or video-conferencing are considered. The primary objectives are to identify and describe: (1) the types of online appraisal which can most easily be integrated in the practice of cybercounseling; (2) the factors to consider in selection of the delivery mode for the online appraisal; and (3) the special considerations related to online appraisal. (Author/ADT)

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Testing and Counseling: A Marriage Saved by the Internet

by
W. Paul Jones

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Chapter Nine

Testing and Counseling: A Marriage Saved by the Internet?

W. Paul Jones

Some three decades ago problems in integrating counseling and testing services led a pioneer in counseling appraisal to describe the combination as a "marriage that failed" (Goldman, 1972). A comparable theme was evident two decades later in an American Counseling Association symposium revisiting the concerns (Goldman, 1994).

The premise in this chapter is that a more optimistic view of that relationship is warranted in the new century. It may in fact be reasonable in the very near future to suggest one more visit to the marriage metaphor, this time with a title "Testing and Counseling: A Marriage Saved by the Internet."

This optimism does not presume that the online modalities for assessment have magically resulted in better tests or even better use of available tests. With perhaps the singular exception of the opportunity for broader accessibility to assessment tools, administering and interpreting tests online thus far seems more closely associated with new issues and the inconvenience of periodic technical breakdowns. As Wall (2000) so aptly described it, there are lots of rocks (for example, concerns about confidentiality/privacy, test instrument quality, and test taker identity) interspersed among the diamonds in online assessment.

The optimism rests instead on the fact that learning how to conduct counseling and testing sessions online has encouraged, if not forced, stepping back to reexamine exactly what we are trying to accomplish through integrating the two. Our training programs have typically emphasized the differences between these two applications, but in confronting the task of substituting computer-mediated communication for face-to-face interactions, it is evident that the features in common far outnumber the areas of difference. A satisfactory "marriage" between counseling and testing may not only be possible; it may be inevitable.

Before examining this premise in more detail some definitions and boundaries for this chapter are needed, guided by the taxonomy for service delivery from the *Standards for the Practice of Internet Counseling* provided by the National Board for Certified Counselors (2001). Technology-assisted

distance counseling, as opposed to face-to-face interactions, is first divided into two categories: Internet Counseling and Telecounseling. Applications of Internet Counseling are then further categorized as e-mail-based counseling, chat-based counseling, and video-based counseling.

A brief examination of an application combining some elements of both telephone-based (POTS or plain old telephone service) and online resources is included at the end of this chapter, but the primary focus will be on integration of testing and counseling via the Internet. Advantages and concerns related to both e-mail interactions and chat and/or video-conferencing will be considered.

What to call the online services remains in some dispute. Internet counseling, e-counseling, e-therapy, online therapy, and cybercounseling are among the many descriptors found in the literature. *Cybercounseling* will be consistently used in this chapter to identify e-mail, chat, and video delivery of online counseling services. The term is descriptive, increasingly evident in the literature, and of course consistent with the title of this book.

A comparable question exists in whether to identify the focus of this chapter as assessment, testing, or appraisal. The process is more often identified as assessment in the current literature; testing is the term with the longer history; and appraisal has strong roots in the counseling profession. Unfortunately (or fortunately) the term *cyberappraisal*, has apparently been usurped by antique auction houses. So throughout this chapter *online appraisal* will be used as the generic identifier for assessment applications delivered via the Internet.

With the above as structure, the primary objectives for this chapter are to identify and describe:

1. The types of online appraisal which can most easily be integrated in the practice of cybercounseling
2. Factors to consider in selection of the delivery mode for the online appraisal
3. Special considerations related to online appraisal.

Underneath the Hood

Before addressing these objectives consider the premise that the basic concepts in testing and counseling, regardless of the delivery mode, are neither complex nor unique. A four-step model is both parsimonious and sufficient. The essence of both testing and counseling is simply the delivery of a

1. Stimulus that elicits a
2. Response that is compared to a

3. Reference which leads to an
4. Inference

Generalizing this model to a traditional testing application requires only that the first two elements become plural. On a typical test the stimuli (test questions) call forth responses (usually marks on an answer sheet) that are compared to a reference (criterion or norm) which then leads to some inference about the characteristics or current status of the test taker.

This simple model also provides an essentially complete description of what goes on in a counseling session. The counselor provides a stimulus (e.g. a question, a nod, a smile, or even silence). The client's responses becomes the data for mental processing by the counselor, in effect comparing the response to a reference stored in the counselor's memory, from which the counselor infers the most appropriate next thing to say or do.

Counseling and testing thus rest on the same underlying foundation. This may not have been so obvious when counseling was perceived as essentially a special form of personalized oral discourse while testing, in contrast, was seen as a procedure which usually distanced the counselor from the client through test booklets and answer sheets. The shared underlying basis becomes much more obvious when the data for both counseling and testing are provided through an online medium, for example a text-chat message.

The intent of the above is not to suggest that cybercounseling is just testing in disguise. There are at times differences in the specific objectives for an information exchange, differences that include standardized vs. personalized stimuli and the extent of "references" available for use in generating inferences. It is important, though, to recognize that these differences relate only to the intent of a particular exchange of information. The underlying features remain the same. Counseling and appraisal are not "different things." They are different applications of the same thing.

From this premise, the integration of counseling and testing in the online modalities is an inevitable outcome. The question for the counselor is not whether to use or avoid use of tests. The questions for the counselor become, "When do I want or need to use a reference that extends beyond what I have stored in my own memory? and How do I provide stimuli that will enable my use of such reference?"

Online Appraisal: Choose Your Weapon

The number of instruments available for online appraisal continues to grow exponentially, so the focus here is on general selection considerations rather than on specific tests. And, although some instruments

generalize easily to application with adolescents, the content and examples in this chapter generally presume online interaction with adult clients. The Practice Standards for Internet Counseling (NBCC, 2001) do not preclude online service with children and adolescents but there are additional concerns regarding confidentiality and parent/guardian consent.

Online Appraisal Using E-Mail

Electronic mail was identified early (Casey, Bloom, & Moan, 1994) as a viable option for online communication in a counseling environment.

Sussman (2000) described e-mail as the easiest way for practitioners to establish online communication with their clients. No appointments are required. The frequency of its use at all levels of society makes it unlikely that any special training would be required. It's a typically available and easy form of communication between persons in adjacent offices and on different continents. It works for one-to-one interactions and as a way to maintain communication within a group.

That's the good news. The bad news is that for online appraisal, the utility of e-mail is mostly limited (with an important exception to be described below) to providing interpretation of test results completed elsewhere. One would have to have extraordinary patience (and questionable judgment) to embark on administration of a standard appraisal tool via exchange of e-mails.

This limitation, though, must be balanced against the broad availability and typical client familiarity with this tool. The online counselor need only direct the client to a resource where a desired appraisal instrument can be completed and make arrangements to receive a copy of the results. Collie, Mitchell, and Murphy (2001) provide particularly helpful suggestions for personalizing the e-mail exchange, including emotional bracketing and descriptive immediacy. The former adds a description of a current emotion, in brackets, to the message text. For example, "I'm recommending their suggestions [feeling lucky to have found this citation]." The latter, as needed, attempts to strengthen the counselor-client bond by extensive elaboration with affective and cognitive descriptors.

A variety of options is available to provide data for test interpretation. There is, for example, some security in turning to familiar instruments. Online versions of Holland's *Self-Directed Search* (http://www.self-directed-search.com/), the *Jackson Vocational Interest Survey* (http://www.jvis.com), and the *Kuder Career Planning System* (http://www.kuder.com/) are available and can be completed by clients for a nominal fee.

The Institute for Personality and Ability Testing (IPAT) offers an online option for the *16 Personality Factor Questionnaire (16PF Fifth Edition)*

(http://www.ipat.com/scoresys.html) in which the counselor arranges for the testing and then sends a password and web site address for the test to the client. Results are e-mailed to the counselor. A comparable service is available through Consulting Psychologists Press for the *Myers-Briggs Type Indicator* and the *Strong Interest Inventory* (http://www.skillsone.org/).

Many free career and personality inventories are also available for online administration, for example the *Career Key* (http://www.careerkey.org/english/) and *CogStyle* (http://www.unlv.edu/Colleges/Education/EP/nl6_1.htm). The former provides scores in reference to the familiar Holland scales. The latter requires a password obtained from the author by submitting request with explanation of intended use and reports scores using an adaptation of *Myers-Briggs Type Indicator* categories.

Other options for free appraisal tools are easily identified with a web search using keywords "free online assessment." With some exceptions, including the two listed above, the rule of thumb unfortunately is that free instruments will typically be worth only what is being paid for them. There is significant variance in the quality of such instruments and prior investigation before recommending to a client is essential.

Tools in the general category of Rapid Assessment Instruments (Fischer & Corcoran, 1994) are especially well suited for use in online appraisal with e-mail delivery and can, unlike most instruments, provide the opportunity for both administration and interpretation via e-mail. Normative data may be available, but these scales typically place more emphasis on a criterion-referenced interpretation, often as just a direct report of current symptom status.

Either through a published scale, or even better with a scale of target symptoms created as a part of a prior counseling session, this technique can be used to maintain contact and monitor progress between sessions. On a schedule prearranged with the client, the counselor sends an e-mail with instructions for the client to indicate current status using the reply option available with essentially all e-mail client software.

This technique is useful both in integration with cybercounseling and as a supplement to face-to-face sessions. Figure 1 illustrates the use of this option.

Specific content will be determined by individual client needs, and this technique is highly adaptable. The focus can be on positive or negative characteristics for one or more problem areas with simple scaling as in the illustration or broader response options. Using progress reports in this manner is particularly recommended in applications of brief and/or solution-focused interventions (for example, Sklare, 1997).

Figure 1. Monitoring Client Progress Via E-Mail

Dear ___

I'm interested in how things have been going since your last report. For each of the problem areas we identified below, what I would like for you to do is: 1) click the reply button on your e-mail program, 2) put a number in front of each of these problems for your reply, and 3) send the message back to me.

To make it easier, let's use:

1 to mean *it's better*
2 to mean *it's about the same*
3 to mean *it's gotten worse*

Put one of those numbers in front of each of these problems we've been working on...

Feeling anxious when around other people
Having trouble falling asleep
Getting really irritable for no apparent reason
Afraid to answer the phone

Thanks for your help. I'm looking forward to our next session.

When using e-mail as the tool for online appraisal, confidentiality is an especially important concern. Most e-mail messages travel through the Internet as plain text files often bouncing from server to server. At any point along the way, the system administrator for the mail server has legitimate access to the message, not to mention the hackers who find ways to get access. Employers may monitor e-mail messages. Relationship partners often share e-mail accounts and addresses. Described as being akin to sending a postcard or using a phone on an old party line, perhaps an even more accurate image in this context is that of conducting an appraisal session seated in an open area of a shopping mall.

This already complex concern is compounded when the focus of a cybercounseling session is interpretation of test results. Typical test reports are replete with terminology that could be misinterpreted, misunderstood, and/or embarrassing to the client.

Getting the results from client to counselor is not difficult. Contingent on the form of the report and the computer skills of the client, a test report could be a file attachment to an e-mail message, pasted directly into an e-

mail message, or faxed to the counselor. Insuring privacy at each step along the way, however, is both a need and a concern.

The Practice Standards for Internet Counseling (NBCC, 2001) suggest that e-mail encryption methods should be used whenever possible and require informing a client about the potential hazards of unsecured communication. A number of options are now available to encrypt e-mail messages, probably the most common of which is the PGP (Pretty Good Privacy) software (http://www.pgpi.org/).

Encrypting the e-mail message does, though, add some complexity to the process, primarily in that both client and counselor must have the necessary keys to decode the transmission. And concerns about national security may limit broad implementation of e-mail encryption, a factor clearly evident in the aftermath of the events of September 11, 2001.

In many counseling settings, increased attention to privacy and confidentiality of information is now a mandate, not just a suggestion. Full implementation of electronic transaction and security rules in the Health Insurance Portability and Accountability Act (HIPPA) is expected by October of 2003 with specific privacy requirements for any provider who uses electronic transmission in any form, ranging from claim submission to transmission of patient information via fax (APAIT, 2002).

In response to these requirements, software applications, for example *Bridgeway Express* (http://www.intacta.com/home/Products/products.html), are now available that compress large documents to a single page of unintelligible dots that can be transmitted via e-mail or standard fax machine. Confidentiality is maintained even when copies are left sitting on unattended fax machines.

Online Appraisal Using Text-Chat

Software programs in which participants exchange messages via typed text, while not as common as e-mail, are familiar to most computer users. Communication is accomplished by typing short messages with the extent of delay in message exchange contingent on the type of software being used. This format can approximate "normal" conversation and is certainly more rapid than an exchange of e-mails.

Factors to consider when implementing an application of the text-chat modality for online appraisal include the

- Type of appraisal service to be provided
- Categories of appraisal instruments that appear appropriate for use with this modality
- Type of software to be used to establish the link

Obviously, the examples above with e-mail used to interpret data obtained elsewhere would generalize easily to a text-chat with the advantage of a communication mode that approximates a face-to-face interaction. The text-chat modality, though, can do more, including clearly illustrating the premise at the beginning of this chapter regarding the underlying common features of counseling and appraisal (stimulus-response-reference-inference).

In theory, any appraisal tool that could be administered aloud to a client in a face-to-face session could instead be administered using a text-chat exchange. Consider for example, the career party exercise, called the Career Interests Game, detailed by Bolles (2001) with an online adaptation at the University of Missouri web site (http://career.missouri.edu/holland).

A client is asked to imagine attending a party with a requirement to join conversations of three of six groups. Each group is described and the descriptors are characteristics typical for the dimensions in the Holland career interests model. The client indicates which group would be the first choice, the second choice, and the third with these choices producing a tentative Holland vocational preference code. A client, for example, whose first choice would be to join a conversation with people who like to observe, learn, and analyze would have an "I" for the first letter in the code, and so forth.

This entire scenario could be completed in an exchange of text-chat messages. And, there is an advantage over face-to-face oral presentation in that the client could scroll back up through the messages to quickly refresh memory about the groups.

Would such an interchange be defined as counseling or defined as testing? The answer from the perspective here is, 'Yes'; it is both. It is an exchange of messages designed to enhance the client's understanding of self in relation to occupations. That is counseling. It is based on responses to a predetermined stimulus set with an identified (and public) reference for comparison. That is testing.

Dividing appraisal instruments into those intended to tap *typical* performance (e.g. attitude scales, personality questionnaires, interest inventories) and those intended to assess *maximum* performance (e.g. intelligence and aptitude tests), it would appear that any one of the former could be administered and interpreted online via text-chat. If, for any reason, a counselor in face-to-face interaction would have chosen to read the questions to the client, those questions could instead be presented to the client as text-chat messages. Caution would be required when norms are used, but no more so than would be essential when changing from test booklet to oral presentation in a face-to-face session.

When the online appraisal is with an instrument designed to assess maximum performance, there are additional concerns, for example timing and credibility. Measures that require precise timing remain problematic in online administration because of several factors, including the quality and stability of the Internet connection. And, when the stimulus is a cognitive function question (e.g. vocabulary, mathematical reasoning), there is nothing to absolutely prevent a client's looking up the answer in a dictionary or asking someone nearby before giving a response.

With current technology, concerns about credibility appear to preclude assessment of maximum performance in any "high stakes" situation, for example a job application. Even this limitation, however, may be minimized in the relatively near future. Biometric facial and/or iris scans, once evident only in science fiction movies, may be not so far away from the office computer (Enbysk, 2002) and the costs are decreasing with that capability being built-in to some new computers.

In the meantime, however, there are other possible applications for appraisal of maximum performance. For an objective of enhancing self-knowledge to use in career exploration it would seem reasonable that the counselor could create an online relationship condition in which honest responses were more likely. There also are instances in which it would be helpful to the counselor to have more information about the client's ability for use in forming credible hypotheses about the direction for intervention.

Both for the self-knowledge and cognitive screen scenarios, a short test with high verbal loading, for example the *Slosson Intelligence Test-R* (Nicholson & Hibpshman, 1990) would appear amenable for administration via text-chat. In such application, it will be crucial for the counselor to use only broad interpretation (e.g. high, mid-level, low) when comparing the responses to the reference data in the manual because of the obvious unknown impact of the different administration mode.

In general, the text-chat modality would appear to have potential for a variety of applications in online appraisal. This modality provides a viable option for both interpreting and administering appraisal instruments with caution, however, of an implicit assumption that the client is able to form written expression relatively rapidly and has the keyboarding skills to respond to stimuli without inordinate delay.

Online Appraisal Using Text-Chat+Video

A primary concern when using text-chat for online appraisal is the loss of visual cues. In face-to-face appraisal, particularly with affective instruments, a client's physical response to a stimulus may be as, if not more, significant than the verbal. The obvious solution for online application is to add video to the computer-mediated communication.

Online appraisal via video conferencing is not a new phenomenon. Support for its efficacy is evident in reference to both general (Ball, Scott, McLaren, & Watson, 1993) and neuropsychological (Troester, Paolo, Glatt, Hubble, et al., 1995) assessment applications. Although typical applications of video conferencing have required sophisticated and expensive hardware configurations that may not be available for most cybercounseling applications, alternatives are available. For example, Jones, Coker, Harbach, and Staples (2002) detail procedures for integrating video broadcast with text-chat using free or relatively inexpensive web cam software.

Visual input would certainly seem a valuable component for use in online appraisal (Coursol & Lewis, 2000; Sampson, 2000) and there are supportive data. For example, Jones, Harbach, Coker, and Staples (in press) compared text-chat with face-to-face modality for delivery of online test interpretation and found ratings of session depth equivalent to the face-to-face modality when the text-chat included a video window showing provider and participant.

A cautionary note evident in the study above, however, was that addition of video broadcast to the text-chat brought higher ratings of discomfort. A follow-up study (Jones, Harbach, Coker, & Staples, 2001), in which the provider's video image was broadcast to all participants during the text-chat and random assignment was used to determine whether the participant's video image was broadcast to the provider, was conducted to further explore the etiology of the discomfort. Consistent with the initial data, higher ratings of discomfort were evident when the participant could be seen on the provider's screen. There was no difference in session depth ratings contingent on broadcast of participant image.

Additional study of the phenomenon of "being seen" is needed, but these data do support attention to extra steps that may be needed to reduce client discomfort when video images are broadcast. These data may also provide some explanation of a finding by Joinson (2001) of more disclosure of information by visually anonymous participants.

Concerns about privacy and confidentiality described above in regard to e-mail service delivery are no less important when online appraisal is being provided using text-chat or video conferencing. Text messages without encryption are an "open letter" being broadcast on the Internet with clear privacy risks. Alternatives to minimize this risk are examined in the next section of this chapter.

Selection of Text-Chat Delivery Mode

Obviously, when the online appraisal is being conducted via e-mail, both counselor and client will typically be using their own familiar e-mail

software. When text-chat with or without video is the preference, the situation is a bit more complex. Choices include:

- Joining a hosted site
- Hosting a chat with Perl software
- Hosting a chat with Java software

Hosted sites, sometimes with video, are readily available and frequently either free or relatively inexpensive. Microsoft's *NetMeeting* (http://www.microsoft.com/windows/netmeeting/) for example, provides text-chat, video conferencing, and other features as a free download. Instant messaging and/or text-chat is available through several browsers and Internet Service Providers, for example *AOL* (http://www.aim.com/index.adp), Netscape (http://wp.netscape.com/aim/index.html), and Opera (http://www.opera.com/support/tutorials/win/im/).

The Internet is replete with chat rooms. Joining is often free. Many offer access to 'private rooms' for conversations open only to selected participants. Chat rooms offer a readily available resource for online delivery of counseling services.

However, for online appraisal applications, a counselor may be better served using software personally tailored by the counselor for her or his individual use. A key concern is privacy.

Private areas in chat rooms require some special permission, usually a password, in order to gain entrance. But all communication in a chat room is typically available to, and often monitored by, a chat room administrator. Chat room administrators serve an important purpose in precluding misuse of the chat area but effectively eliminate the capability to promise confidentiality to a client.

Hosting a chat area for online appraisal purposes may appear to be a daunting task but is well within the capabilities of a counselor with average computer skills. Essential software can be obtained at little or no cost. Hosting capabilities may be available through the Internet service provider or accomplished on any computer with Internet access.

Locally hosted chat software packages are of two types, each with inherent advantages and some disadvantages. The most common text-chat programs use the Common Gateway Interface (CGI) protocol that allows users to a web site to run a program on the host computer. The text-chat program is most often a Perl (Practical Extraction and Reporting Language) script. Perl scripts have several advantages for implementation as a text-chat resource for online appraisal. They are easily obtained, relatively easy to personalize, and require only a web site to which files can be uploaded and permission to run the software on the site. There are many examples of such programs available for free download including specific instructions

for installing and customizing. The *Chat-N-Time* package (http://www.tesol.net/scripts/Chat-N-Time/index.html) is one example of typical free text-chat software. Perl scripts are remarkably robust across various operating systems. If a client can access the Internet, that client can usually access and participate in a text-chat.

Response time is probably the primary disadvantage. In this type of text-chat, a message is essentially just input from an html form to a "virtual" script on the host site. Since all users are accessing the same script, there is an inevitable delay and occasionally some message cross over (e.g. client has already sent response when counselor sends follow-up query asking if clarification is needed).

. Typical Java-based text-chat software mirrors Perl script advantages and disadvantages. Exchange of messages is near real-time, comparable to the increasingly familiar instant messaging program. Installation and customization are more difficult.

Required software usually includes a Java "application" program running as a chat server on the host computer and a Java "applet" accessed by the user with a standard html file. During the text-chat session, the applet is temporarily copied to and run on the user's computer; the server component distributes the messages through a predetermined socket (port) on the computer, rather than a shared script.

The counselor and client must be using a browser with Java enabled. And, there are occasional annoyances with differences in computer platforms (e.g. Windows and Macintosh render Java only "almost" the same).

Whether Java-based text-chat is a viable alternative for online appraisal depends on the computer skill (and patience) of the counselor. The several advantages though are sufficient to warrant some consideration and there are free downloads, for example *okChat* (http://www.okchat.com/), with which to experiment.

Computer socket connections can also be used to broadcast video images, and the addition of visual input may add an important dimension to online appraisal applications. There are some clinical concerns (described earlier in this chapter) but data to this point generally support higher ratings of session quality with video when text-chat plus video is compared to text-chat alone. As with the text-chat application, free and/or inexpensive software for video broadcast is now readily available. For example, consider the *Webcam2000* (http://www.stratoware.com/webcam2000/) package.

A strong recommendation would be to find software that uses socket-based communication rather than uploading picture files at predetermined intervals. With web cam software, even the former has some limitations in simulating actual visual input and the latter results in such erratic images that its utility is probably just as a curiosity whose value fades quickly.

The intent in this section has been to encourage experimentation with a variety of communication formats. The software examples were intended to serve as illustrations of available packages to learn about the process and not as specific endorsements. Development in this area is so rapid that any such listing is becoming dated even as it is being written.

If an Internet Service Provider is unable (or unwilling) to allow the access needed to install programs like those described above, free software that allows you to host your own web site is available. And programs are available that allow such use even if your primary access is through a dynamic (e.g. the specific number assigned to your computer varies with each access) rather than static IP.

Special Considerations in Online Appraisal

In preparing the outline for this chapter, this last section was envisioned as a kind of miscellaneous category for topics that did not appear to fit easily into the other chapter headings but warranted attention in applications involving online appraisal. They are:

- Appraisal considerations for clients with disabilities
- The text-chat environment
- Thinking outside the box

Considerations for Clients with Disabilities

Delivering online appraisal for clients with disabilities requires attention to providing barrier-free web sites (NBCC, 2001) and to features in specific disabling conditions that might influence speed and/or accuracy of text processing. For example, a delayed response to a query might be the result of the client's emotional response to that content but could instead be simply a function of difficulty in cognitively processing the question in text format (or just a slow Internet connection).

Voice synthesizers that read computer screens enable persons with visual disability to traverse the web but can easily become bogged down with multi-layered screens. Providers are strongly urged to review the information associated with *Bobby* (http://www.cast.org/Bobby/), a program created by the Center for Applied Special Technology to help identify and repair web-site barriers to access by persons with disabilities. Providers whose sites include extensive visual graphics may, for example, want to prepare a text-only version of opening pages with clear links to the areas used in appraisal applications. Obviously, whatever modifications a counselor would make in a face-to-face appraisal involving a person with a disability (e.g. norms, time limits, and so forth) is also needed in online applications.

The "jury is still out" on whether the negative attitudes and stereotypes of the general population toward persons with disabilities (for example, Gething, 1992) generalize to the attitudes of practicing counselors. Some studies (e.g. Carney & Cobia, 1994) have suggested that counselors, particularly those with a rehabilitation emphasis, have a more positive attitude than is evident in the population as a whole.

Even if counselors are less prone than others to prejudge client characteristics on the basis of an evident disability, clients may have learned to filter their responses based on an expectation of such bias. When the appraisal is being conducted in an online format, particularly without visual input, this question is moot. One could in fact easily mount an argument that the online modality for assessment offers the higher probability that the counselor's inferences will not be unduly influenced by irrelevant physical characteristics.

The Text-Chat Environment

There is an evident, and at times disconcerting, sterility in most experiences with computer-mediated communication. Messages intended to be informative often come across as cold without the accompanying voice tone or facial expression.

Emotional bracketing and descriptive immediacy (Collie, Mitchell, & Murphy, 2001) were described earlier as tools to compensate in the e-mail environment. In the text-chat environment avatars (small pictures used to represent self) and emoticons (visual symbols created with keystrokes) are used for this purpose. The text-chat environment also includes an array of acronyms to express emotions and/or speed the message exchange. Chisholm (2002) provides an especially useful resource on typically used emoticons and acronyms.

The extent to which the acronyms and visual symbols are appropriate for use in an online appraisal environment is contingent, at least in part, on style preferences of the counselor. Some acronyms, for example "MTF" for "more to follow," may be quite useful to inform the other person that a text-chat message has been received and a response is being prepared. In general, however, informality should probably be avoided in online appraisal applications for the same reason that some formality is preferred in face-to-face counseling sessions to differentiate such sessions from informal conversations.

Text message sterility could be eliminated with actual voice transmission via the Internet to the computer sound card, and this capability is included in some conferencing software. At the time of this writing however this technology does not yet appear to be "ready for prime time."

Struggling to find meaning in text messages appears preferable to struggling with garbled voice transmissions. The problem is especially evident in video conferencing with audio transmission. The gap between facial movement and sound is often akin to poorly dubbed foreign movies.

Message encryption is an important concern and is especially problematic in text-chat with shared Perl scripts. Steps taken at the host level to encrypt the messages are essentially useless unless messages are coded before leaving the local machine, and this adds a significant complication in setting up online interactions with distant users.

Java-based text-chat software is more amenable to message encryption because in this type of application, the local machine is actually running software temporarily (and invisibly) downloaded from the host. The software can be adapted so that after the client types the desired message and presses the key to send, the message is coded *before* it is transmitted over the Internet. The target machine receives a coded message and then, again at the local level, the software decodes the message before it appears on the screen.

The actual encryption can be complex or as simple as a letter substitution code. The latter code could be easily broken but the intent is just to preclude eavesdropping as the message makes its way through servers on the Internet. Even the most complex codes can be broken given enough time, motivation, and skill (just as a person with sufficient desire and tools could "listen in" to face-to-face conversations in the counselor's office).

Thinking Outside the Box

Most of the emphasis in online delivery of counseling and appraisal services has thus far been on simulating a face-to-face interchange in a web-based environment. The next logical step would appear to be the design of online appraisal applications that do things difficult if not impossible to accomplish in a standard face-to-face environment.

For example, a typical questionnaire item asks the client to select among options like "afraid," "somewhat afraid," and "not afraid" for the feeling associated with entering a room full of strangers. More valuable information might be obtained by creating online virtual reality simulations in which the client would experience entering such a room. The client could then either be asked to report the feeling or, with technology that appears just over the horizon, the counselor could observe the impact with some type of biometric measure.

Appraisal associated with career counseling would seem to offer an especially rich setting for virtual reality simulations. How the results would compare with those from current instruments is unknown, but if such applications are as valuable as anticipated, an interesting predicted outcome

would be a new dialogue in the professional community. The new debate may be on the extent to which the online appraisal features could be replicated in a face-to-face environment.

Garbled audio transmissions were described above as the rationale for using the text-chat modality for message transmission. A possible utility of this "problem" was explored in a study (Jones, 2001) using purposeful degrading of the aural stimulus in an online appraisal application. Six declarative sentences were prepared with increasing levels of speech compression. Following the presentation of the sentence the user, in multiple-choice format, is asked to identify the actor in the sentence, the setting, and the target (e.g. the man was in the kitchen to get a pencil).

The premise was that the perceptual process in responding to incomplete sounds might be comparable to that of the incomplete picture format often used in standard assessment of simultaneous processing in Luria's model of neuropsychological function. More research is needed, but initial results were promising.

Combining various modalities and appraisal objectives into single integrated application is another possible direction for the future. To study the impact of video broadcast on perceived session quality and client comfort (Jones, Harbach, Coker, & Staples, 2001), a software package was prepared with several elements. Java-based chat was used for real-time text messaging; Perl script was used to write temporary files to the host computer; video broadcast was accomplished with web cam software and participants completed an online career interest survey prepared in Java.

In actual use this application was not complex. Text-chat was used first to establish the relationship, respond to questions, and then direct the participant to the online test. The counselor's video image was in a small window on the participant's screen throughout the session. While the online test was being completed, periodic loading of a status file enabled the counselor to monitor the process. The participant could return to the text-chat at any time to ask for assistance. A completed test meant it was time for the counselor to load the results file and return to the text-chat for interpretation.

A far less complex integration of technologies uses the tool most familiar to both counselor and the client, the telephone. A line for standard phone use near the computer, an Internet connection that does not use this line, and a camera with web cam software provide all the resources needed to conduct an online appraisal with some features of video conferencing. The web cam software streams the video image to a web page. The client needs only the resources to be simultaneously on the Internet and talking on the phone. During the session the client can view either the counselor's

image or anything else that would be helpful in the appraisal by going to the designated web page.

Concluding Thoughts

In the early publications about the possible impact of technology on counseling, few, if any, could have anticipated the dramatic changes that are now evident. The illustrations in this chapter, while confidently presented as current state of the art, will no doubt soon be consigned to the "that's how they used to do it" category.

In the midst of the ongoing change, some constants remain intact. In both cybercounseling and online appraisal, the counselors provide stimuli, the clients respond, the counselors process those responses against some form of reference, inferences are drawn which lead to more stimuli. We may prefer to call it testing when a predetermined set of stimuli is delivered and compared to a public reference in the form of a norms table as opposed to each new stimulus being contingent on a prior response. But even that distinction fades with adaptive testing that selects each subsequent test item contingent on the response to the one that preceded it.

The online environment changes only "how" this is done; "what" is being done remains the same. At the end of the line, regardless of whether one chooses to call this counseling or testing, this enterprise ultimately rests on the wisdom and skill of the counselor to bring meaning to the responses through drawing appropriate inferences.

With that in mind, and returning to the metaphor at the beginning of the chapter, it seems now safe to assume that the relationship between counseling and testing is forever. To adapt an oft-misquoted line from Mark Twain, reports of the demise of this marriage were premature. (What Twain actually wrote, in a letter to a friend in May of 1897 was that the "report of my death was an exaggeration.") I learned that, by the way, on the Internet (http://www.twainquotes.com/Death.html).

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